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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,430	08/17/2001	Bing Chao	EKM-81895	3438
30764	7590	01/11/2005	EXAMINER	
SHEPPARD, MULLIN, RICHTER & HAMPTON LLP			DUONG, THANH P	
333 SOUTH HOPE STREET			ART UNIT	
48TH FLOOR			PAPER NUMBER	
LOS ANGELES, CA 90071-1448			1764	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/932,430

Applicant(s)

CHAO ET AL.

Examiner

Tom P Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-17, 19, 21, 30-33, 36 and 38-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-17, 19, 21, 30-33, 36 and 38-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

Applicants' remarks and amendments filed on October 5, 2004 have been carefully considered. Claims 13,19, 21, 30, and 38 have been amended. Claims 18, 20, 23, 34-35, and 37 have been canceled. New claims 39-54 have been added. Claims 13-17,19, 21, 30-33, 36, and 38-54 are pending in this application.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 39-45, 47-49 and 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (5,346,217). Tsuchiya discloses a method of manufacturing (Abstract) a golf club (Fig. 1) comprising: forming a crown (10b), a skirt (rear body), a sole (10c), front opening (Fig. 4), crown having a thickness less than about 0.8mm (Col. 4, lines 48-51) over at least a crown transition distance of about 20 mm measured rearward from the front opening; forming a striking plate (10a) from a material comprising a titanium alloy (Col. 6, lines 58-68) of alpha-beta type (Col. 7, lines 13-15) having thickness 2.0-3.5 mm (Col. 4, lines 48-50); attaching the striking plate (10a) to the front opening (Fig.

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4); a body having a height ranging from 45-60 mm and width ranging from 70 mm or larger; cold forming or plastic working (Col. 4, lines 65-67) and solution treatment (Col. 7, lines 1-5). With respect to the unitary body construction, it would have been obvious in view of Tsuchiya to one having ordinary skill in the art to fabricate the club head body comprising a plurality of club parts or a unitary body since it has been held that a one-piece construction versus several parts secured together as a single unit is an obvious matter of design choice. See *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965). In addition, it is conventional to provide a unitary body construction for more uniformed construction, control weight distribution, and reduces manufacturing cost (See USPN 6,162,133). With respect to claim 47, the striking plate of Tsuchiya is made of the same material as the claimed invention; thus, it inherently has the same material properties. See *In re Best*, 562 F.2d 1252, 195 USPQ 430, 433 (CCPA 1977).

2. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. '217) in view of Hocknell et al. (6,440,011). Tsuchiya fails to disclose a striking plate having periphery region thickness is 0.5mm less than the geometric center. Hocknell teaches the a striking plate 72 with periphery region 110 less than concentric region 108 and such feature enhances flexibility of the striking plate which corresponds to a greater COR (col. 5, lines 59-67).

3. Claims 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (5,346,217) in view of Japanese Publication 2001-029518

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(JP '518). Tsuchiya discloses heat treatment of the striking plate but fails to disclose cold forming of the titanium sheet ranging from 15-70%. JP '518 teaches 15% or more of the cold working process in club head (Section 0006 and Section 0012) and such metal forming process increased stress resistance and hardness (Page 3, Section 0017-0018). Thus, it would have been obvious in view of JP '518 to one having ordinary skill in the art to fabricate the club head of the prior art using 15% or more of the cold working as taught by JP '518 to gain the above benefits.

4. Claims 13-14, 16-17, 19, 30-33, 36, 38-48, and 52-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hocknell et al. (6,440,011) in view of Peterson (6,162,133). Regarding claims 13-14, 16-17, 19, 30-33, 36, 38-48, and 52-54, Hocknell discloses a golf club comprising: an opening 54 to receive a shaft 48; a body 44 having striking plate (geometric center 0.110-0.07 inch), periphery region 0.069-0.061 inch) made of alpha-beta titanium; a crown 62 (Col. 5, lines 15-22) having thickness range of 0.025-0.060 inch over at least a crown transition distance of about 20 mm (a predetermined distance ranges from 0.2 to 1.0 inch) measured rearward from the front opening (Col. 4, lines 21-33); face height of 48 mm; rear section 70 (best understood to be the skirt); and a sole 64 having thickness range of 0.025-0.060 inch; weight members 122 and 123; and a golf club volume ranging from 175-400 cc; and width/height (aspect ratio) ranging from 1.0 to 1.7 (Col. 6, lines 5-12). Note, the "crown transition distance" of the claimed invention is equivalent to the "predetermined distance" of Hocknell being the fact that the predetermined distance is the transition distance of the crown

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toward the perimeter 73 or front opening of the face plate 72. Hocknell does not disclose expressly the material properties of the striking face; however Hocknell discloses the face member 60 made of alpha-beta titanium and/or titanium alloy (Col. 6, lines 40-45), which inherently have the same properties as the claimed invention since the materials are the same. Hocknell fails to disclose the maximum thickness of the striking face is less than 2.2 mm and head construction is a unitary body. Peterson teaches a striking plate with design thickness ranging from 1.5-3.0 mm (Col. 4, lines 63-67) and the thickness selection is depended on desire strength, configuration, and weight distribution (Col. 5, lines 1-8). Peterson also teaches a unitary, one-piece body 32, which provides the advantage for its uniformed construction, weight distribution, and reduces manufacturing cost (Col. 4, lines 23-48). Thus, it would have been obvious in view of Peterson to one having ordinary skill in the art to provide a golf club head of Hocknell with a thin striking plate and a unitary head construction as taught by Peterson in order to gain the above advantages. Note, to make a one-piece construction versus several parts secured together as a single unit is an obvious matter of design choice. See *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965). With respect to the COR versus its loft angle for a given club head, a higher COR value inherently requires a design with decreased loft angle while a smaller COR value results in a design with increased loft angle. Regarding claim 14, it is conventional in the golf club's art to assemble club head by welding club parts together. Regarding claims 16-17, it is conventional to thickening the sole portion or add weights to the sole portion

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to lower the center of gravity and it is inherent to do so here to gain the same benefits.

5. Claims 15, 21, and 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hocknell et al. (6,440,011) in view of Peterson (6,162,133) as applied to claim 13 above, and further in view of Japanese Publication 2001-029518. Regarding claims 15 and 49-51, the Hocknell in view of Peterson discloses the claimed invention except the cold forming process of the striking plate and solution heat treatment. JP '518 teaches 15% or more of the cold working process in club head and solution heat treatment (Section 0006) and such metal forming process increased stress resistance and hardness (Page 3, Section 0017-0018). Thus, it would have been obvious in view of JP '518 to one having ordinary skill in the art to fabricate the club head of the prior art using 15% or more of the cold working and solution heat treatment as taught by JP '518 to gain the above benefits.

### ***Response to Arguments***

Applicant's arguments filed 10/5/04 have been fully considered but they are not persuasive. Applicant's arguments with respect to claims 13-21, 23, and 30-38 are not persuasive. Newly added claims 39-54 necessitate new ground (s) of rejection.

Applicants' argue Hocknell '011 fails to disclose a "crown having a thickness of less than about 0.8mm over at least a crown transition distance of about 20 mm measured rearward from the front opening and a sole having a

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thickness of less than about 1.0mm over at least a sole transition distance of about 20 mm measured rearward from the front opening.” Examiner respectfully disagrees since Hocknell discloses such feature. Momentarily, examiner draws Applicants’ attention to the original specification (page 14, lines 20-23 and page 15, lines 1-2) which discloses “In accordance with the present invention, a majority of the crown of the club head is less than about 0.8 mm thick, and a majority of the sole of the club head is less than about 1.0 mm thick. Preferably, at least transition regions Rc, Rs extending about 20 mm from the junction of the striking plate with the crown and sole portions of the club head are less than about 0.8 mm and 1.0 mm thick, respectively. This transition region is shown in one preferred embodiment in FIG. 10.” The above paragraph merely discloses a crown having a “designated” transition regions Rc and Rs with the same thickness as the rest of the crown portion but no structural difference between the transition regions (or crown transition distance) versus the majority of the crown portion. If this is the case, then one skilled in the art can “designate” a crown portion of any conventional golf drivers with an arbitrarily “transition regions Rc and Rs” such as discloses by Tsuchiya ‘217 which is applied in the above art rejection. Note, the claims are given their broadest reasonable interpretation consistent with the specification. See *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). In this case, the predetermined distance ranges from 0.2 to 1.0 inch of the upper and lower lateral extension 76 and 78 is interpreted as equivalent to the crown transition distance of the claimed invention. Typically, the crown transition region(s) either have a thinner or thicker



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region from its major crown portions (See cited USPN 6,364,789 and USPN 6,491,592).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 6,354,789 and USPN 6,491,592 show crown feature relevant to the claimed invention.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

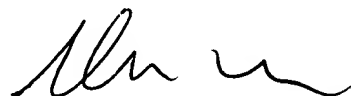
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Duong  
December 28, 2004

TD



Glenn Caldarola  
Supervisory Patent Examiner  
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